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Title	The Thing About Microphones
Type	Article
URL	https://ualresearchonline.arts.ac.uk/id/eprint/14244/
Date	2016
Citation	Wright, Mark Peter (2016) The Thing About Microphones. Leonardo Music Journal (special issue on Sound Art), 26. pp. 60-63. ISSN 0961-1215
Creators	Wright, Mark Peter

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The Thing about Microphones

MARK PETER WRIGHT

ABSTRACT

This article examines the microphone and its connective political and nonhuman ecologies. A media archaeological excavation of Leon Theremin's role in the development of a specific bugging device ("The Thing") facilitates discussion throughout. Situating the microphone within a networked history of power relations and ethical consequences, the author draws upon contexts of surveillance, parasites and horror in order to ask whether microphones are agential actors and, if so, what the consequences might be.

Recent literature within sound studies has focused on the act of listening as central to contemporary praxis and discourse [1]. As a consequence, the microphone—sound arts' core methodological tool—has been overlooked in pursuit of the essentialized ear or been circumnavigated in favor of art historical mappings [2].

Critical microphonic debate lags under the weight of its normative application as a tool of servitude that facilitates the audiophile's pursuit of fidelity. The following writing therefore aims to generate new critical debate around the microphone and its complex relationship to nonhuman agency. In addition to examining the implications of Leon Theremin's microphonic bug, I apply Bruno Latour's Actor-Network Theory (ANT) as a critical lens in order to draw out the microphone's "actant" potentiality. Finally, I look at how Marcel O'Gorman's theory of "necromedia" propels the microphone and its consequent representations toward the horrific.

THEREMIN'S "THING"

Ask most people about musical inventor and composer Leon Theremin and they will tell you he invented a musical instrument that can be played without actually putting your hands on anything. This of course is true, but like most people Theremin has other stories, one of which involves his pivotal role in a covert eavesdropping operation at the height of the Cold War.

Theremin was the creator of a unique listening device (bug) that was housed within the carved front of the Great Seal of the United States. Presented as a gift on 4 July 1945 to Averell Harriman, U.S. ambassador to Moscow, the plaque was mounted on a wall inside his Moscow office [3]. Unbeknownst to Harriman or any other U.S. official, behind the eagle's beak adorning the plaque lay Theremin's unique listening device. The microphone was small and had no power supply or active electronic components. It consisted of a passive cavity resonator, which became active only when a specific radio frequency was sent to the device from an external transmitter [4]. This meant the bug could reside in secrecy and function for a potentially unlimited time. For seven years and over the tenure of four U.S. ambassadors, Theremin's bug relayed confidential information to the remote ears of intelligence operatives. The name assigned to Theremin's microphonic creation was "The Thing."

MATERIAL BODIES

The term "bug" can be traced to Admiral Grace Hopper, a Navy computer scientist who grafted the word into technovocabulary when she found the body of a moth interrupting the physical circuits of the first electronic computer she was programming [5]. The inaugural "debugging" was achieved simply by removing the corpse. Hopper's moth incident took place just months after Theremin's own bug made its stealthy way into office [6].

Animal augmentation was rife in early electrical experiments, which often involved ox heads and frogs' legs. The galvanometer—an instrument for detecting electric current—paved a specific pathway for the telephone industry and, by proxy, the invention and application of the microphone [7]. Further underscoring the entanglement of nonhumans and sonic media, the Lac beetle is perhaps the most potent bodily connection. The resin secreted from the female insect across the forests of India and Thailand fueled the

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See <www.mitpressjournals.org/toc/lmj/-/26> for supplemental files associated with this issue.

 doi:10.1162/LMJ_a_00977 ©2016 ISAST

gramophone industry and in doing so reinforced the point that humans, animals and media are not mutually exclusive with regard to their histories and relationships [8].

Theremin's Thing carries an amusing amalgamation of associative bodies: a bug, an eagle's beak, a nation's great seal and a rather crypto-horror name for the microphone itself. Aside from these medianatures [9], however, we have the question: What is the Thing's function? What can we say of its agential capability? Could this microphone be deemed parasitical during its seven-year residence in the ambassador's office?

PARASITICAL AGENCY

Theremin's device was the first passive microphone of its kind. Such technical passivity is transformed through its agential capability. Feminist theorist and philosopher Karen Barad defines agency not as an attribute but as a doing, enacted continually through performative potentiality [10]. As a result, things are transformed through their ongoing relations: "apparatuses are themselves phenomena" [11]. In other words, things, in their relation to other things, become more than their anthropocentric function. Theremin's bug certainly performed a form of listening over the course of its seven-year residence; its technical passivity should not obfuscate its active agential becoming.

Philosopher of science Bruno Latour's Actor-Network Theory (ANT) offers a useful critical context within which to situate such discussions. Underpinning much recent posthuman philosophy, including Object Oriented Ontology [12], Speculative Realism [13] and New Materialism [14], ANT is primarily concerned with how humans and nonhumans, including media technologies, come to form networked relationships. Such relations are always in flux due to the constant performance of actors (microbes, humans and technology). Actors are interconnected through the way they make others "do things" [15]. Importantly for the microphone, "ANT is not the empty claim that objects *do things* 'instead' of human actors" [16]. Within this network of relations, "each participant is treated as a full-blown mediator . . . where all the actors *do something*" [17]. Mediators "transform, translate, distort, and modify the meaning or the elements they are supposed to carry" [18].

Similarly, I would argue that the microphonic actor is not autonomous in and of itself, nor is it an impartial tool of servitude. It is a distortion mediator that performs agency in active relation to others, and it is contained within a web of cause and effect, human and nonhuman, material and immaterial performativity. The importance of ANT for any microphone, then, is that it makes clear that the emphasis resides on relations and effects. This is a key point in what I am arguing in this article—that to grip the microphone is to extend oneself into a network of histories and power relations. The resulting consequence for sound studies and particular genres such as field recording is that capturing sound can never be neutral. The resulting audio document can likewise never claim ethico-aesthetic impunity or function as a "pure" representation.

BYTES HURT

Typically parasites do not kill their hosts but live in, off and on them, deriving nutrients over an extended period of time. Parasites are smaller than their hosts, the smallest being bacterial agents that are undetectable unless microscopically analyzed. In many cases it is impossible to prove that harm is done to a host.

Theremin's Thing resided unknown to its host, the U.S. embassy, draining information without any tangible sign of harm. The microphone, like the parasite, could be said to leave no trace. Yet the Thing did have an effect. At the very least it would have influenced decisions in such a way that we cannot rule out its impact. As Albert Glinsky notes, the Hiroshima and Nagasaki bombings occurred as the Thing made its way into office [19].

The radio waves that stirred the Thing's techno-slumber triggered a relentless reawakening and metamorphosed the microphonic agent from parasite to zombie slave. Although seemingly autonomous and invisible to its host, it was nonetheless connected to human ears and hands via the radio signals that manipulated its performance. The Thing's remote listeners were tied into a material world of labor and political endeavor. The Thing was a connective grafting of the human, animal and technological: amalgamated membranes and diaphragms that produced consequences in spite of seeming immateriality.

Through such ANT analysis, the Thing, and by proxy any microphone, can be read not only as something that "sucks" but also something that "spreads." Much like bacteria or a virus, the microphone is a contagious performer. As with any bacteria that can cause disease and decay, so too then can we say the microphone, as viral bug, has the potential to infect; microphones are never passive in their continual transformation of an environment; they are alive and kicking(!).

Such performative agency was even recognized in 1878, as an article in the *New York Times* makes clear throughout its sustained attack on Thomas Edison, a man apparently "addicted to electricity" [20]. The news report lambasts the microphone for its ability to audit private conversations, prompting the bold proclamation that it is an "atrocious instrument . . . devastating in its effects" [21].

HACKED TO DEATH

Animals are repeatedly hacked in microphonic history, both materially and through associative borrowing [22]. Histories of surveillance and espionage bring pertinent examples. The CIA-led 1960s project Acoustic Kitty was an infamous case, in which a cat had a microphone surgically implanted in its ear, a transmitter implanted in the base of its skull, and wire entwined in its fur [23]. Such military-industrial engineering inevitably finds its channels of power through the "humanimentical" agent [24] (Fig. 1).

To *hack* literally means to "cut through"; one can "hack" meat or branches. *Hack* also means to "gain unauthorized access." The microphone hacks humans and environments and, perhaps more physically, nonhuman bodies due to asymmetrical relations of power. The microphone constantly

Fig. 1. *Humanimentical Prototype,* 2015. (© Mark Peter Wright)

produces a transgression, fusing material and metaphorical hybrids along the way. As author Eugene Thacker makes clear, crossing borders and breaching limits is what typifies the horror genre [25]. Philosopher Dylan Trigg states that "horror involves the intersection of the human and nonhuman" [26]. Hence the microphone comes to reflect something built out of the horrific: a chimeric indexer of border crossings that continually splits or spits outward, into and through its subjects. There is a latent horror therefore within the microphone, an instrument that hacks away at spatial and bodily borders [27].

In filmmaker John Carpenter's horror movie *The Thing* (1982), an alien parasitical creature replicates its hosts. This process is never one of exact mimesis; rather it is a cross-hatching of identities and material energies that spawn collisions of the human and nonhuman. Similarly, the microphone produces nonrepresentational assemblages through its own idiosyncratic process of capture. It does not do so in autonomous isolation. Instead it holds on to human hands and power relationships that shape the sociopolitical world. Hence, a microphone can never be employed as an inanimate or anonymous device. It connects to a political ecology of subjectivity and power: a latticing of humans, nonhumans, technologies and media histories. Its consequent representations (recordings) forge a pathway toward monstrous potentiality rather than any singular notion of reality.

Within this horrific context the microphone becomes a "necromedia actant." As media activist Marcel O'Gorman's book *Necromedia* (2015) amplifies the entanglement of technology and death, the microphone too, like the camera, sits within a similar thanatological context. "Rifle" and "shotgun" models that make up recording kits further this parallel techno-death drive. Issues of tracking, plundering and predation internally stalk genres such as field recording and should be acknowledged as a counterweight to the altruism that stems from acoustic ecology legacies and the presumed inconsequentiality of capturing environmental sound.

O'Gorman marks out the difference between terror and horror, suggesting that terror is the ongoing pursuit of something never quite there, while horror is the point of stumbling upon the corpse—a moment that is typified by its frozen revelation [28]. Field recordists, and sound as a medium, may simply be terrorizing one another through an endless peripatetic pursuit—like a snake eating its own tail. If this is the case, I can also speculate that the recorded representations—which find homes in archives, CDs or installations—are in fact suspended moments of horror.

Through such necromedia questioning of the microphone, we begin to disturb the very act of recording sound and open up new questions that draw upon the parasitical and horrific: Does the hand grip the microphone or does the microphone grip the hand? If the microphone hacks its way through bodies and space, what can we say about the consequent recorded document? What is really being captured other than the so-called signal?

CONCLUSION

How then was Leon Theremin's microphonic bug discovered, and what happened when it was?

A British radio operator overheard the voice of then-Ambassador George F. Kennan on an open radio channel as radio waves were being fired at the device in order to activate it. U.S. technicians used electronic sweepers to fire frequencies inside the ambassador's office until the Thing gave a "howl" of feedback, revealing itself through its own creaturely scream. Also known as "parasitic oscillation," feedback comes to symbolize a type of audial self-horror, an uncanny moment in which a mirror is held up and the self's true abomination is revealed.

As with Hopper's moth, debugging the Thing involved its physical removal from the host. It does not feel far-fetched to imagine the microphone being picked up, legs squirming as it let out its howl of self-horror [29]. The U.S. ambassador's dictated notes on this event allude to the Thing's sinister agential identity: "One was acutely conscious of the unseen presence in the room of a third person: our attentive monitor. It seemed that one could almost hear his breathing" [30].

The thing about microphones is that a seemingly anonymous piece of technology is in fact a performative agent, one that actively queers histories of the human and nonhuman through a material and speculative webbing of power and ethics.

References and Notes

1 Angus Carlyle and Cathy Lane, eds., *On Listening* (Devon: Uniform Books, 2013); Brandon LaBelle, *Acoustic Territories* (London: Continuum, 2010); Salomé Voegelin, *Listening to Noise and Silence: Towards a Philosophy of Sound Art* (London: Continuum, 2010).

2 Christoph Cox and Daniel Warner, eds., *Audio Culture: Readings in Modern Music* (London: Continuum, 2004); Seth Kim-Cohen, *In the Blink of an Ear* (London: Continuum, 2009); Alan Licht, *Sound Art: Beyond Music, Between Categories* (New York: Rizzoli International, 2007).

3 Albert Glinsky, *Theremin: Ether Music and Espionage* (Chicago: University of Illinois Press, 2000) p. 259. The plaque was a gesture of friendship presented by Soviet Boy Scouts to mark the annual Independence Day reception.

4 "An external microwave beam of 330 MHz was directed at its antenna from a neighboring building, causing a metal plate inside the cylinder to resonate a miniature tuned circuit. . . . The pattern of the diaphragm's vibrations caused fluctuations in the capacitance between the diaphragm itself and the plate of the tuned circuit that faced it, causing it to act as a microphone." Glinsky [3] pp. 259–260.

5 Sadie Plant, *Zeroes + Ones: Digital Women + the New Technoculture* (London: Fourth Estates Ltd, 1997) p. 127.

6 Note: Hopper's "debugging" is said to have occurred in September 1945, although the date is still debated. See <www.wired.com/2013/12/googles-doodle-honors-grace-hopper-and-entomology>.

7 Douglas Kahn, *Earth Sound Signal: Energies and Earth Magnitude in the Arts* (Berkeley: University of California Press, 2013) pp. 34–40.

8 Jacob Smith, *Eco-Sonic Media* (Berkeley: University of California Press, 2015) pp. 17–24.

9 Jussi Parikka, *Medianatures* (Open Source: Living Books About Life, 2011).

10 Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter," *Journal of Women in Culture and Society* 28, No. 3, 816–818 (2003).

11 Barad [10] p. 817.

12 Ian Bogost, *Alien Phenomenology, or What It's Like to Be a Thing* (Minneapolis: University of Minnesota Press, 2012).

13 Graham Harman, *Towards Speculative Realism: Essays and Lectures* (London: Zero Books, 2010).

14 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (London: Duke Univ. Press, 2010).

15 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford Univ. Press, 2005) p. 107.

16 Latour [15] p. 72.

17 Latour [15] p. 128.

18 Latour [15] p. 39.

19 Glinsky [3] p. 260.

20 *New York Times,* "The Aerophone," (1887). See <www.techdirt.com/articles/20140922/18035428602/moral-panics-1878-ny-times-warns-people-about-evils-thomas-edisons-aerophone.shtml>.

21 *New York Times* [20].

22 Fluffy microphone windshields also go by the name of "dead cats."

23 The aim was that the microphonic cat would eavesdrop on intended targets. However, the first cat to be deployed ran into the street and was killed by a passing car.

24 "Humanimentical" is a neologism I use to describe an assemblage of the human, animal, environmental and technological.

25 Eugene Thacker, *In the Dust of This Planet* (London: Zero Books, 2011) pp. 8–9.

26 Dylan Trigg, *The Thing: A Phenomenology of Horror* (London: Zero Books, 2014) p. 38.

27 Upon discovery of the Thing, the technician "took a hammer, and began, to my bewilderment and consternation, to hack to pieces the brick wall where the seal had been," according to Ambassador Kennan's dictated notes. Glinsky [3] pp. 271–272.

28 Marcel O'Gorman, *Necromedia* (Minneapolis: University of Minnesota Press, 2015) pp. 176–177.

29 A replica of the plaque now lurks on display at the National Cryptological Museum (U.S.A.).

30 Glinsky [3] p. 272.

Manuscript received 2 January 2016.

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